



SEQUENCE LISTING

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<120> CHAPERONE FRAGMENTS

<130> 674508-2001

<140> 09/276,455

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<150> 97/02652

<151> 1997-09-26

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<151> 1996-12-03

<150> 9620243.7

<151> 1996-09-26

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<170> PatentIn Ver. 2.1

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<211> 27

<212> DNA

<213> Escherichia coli

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27

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30

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31

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cgaattctta gtctttgttg atcacaacac gtttagcctg ac 42

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<400> 7
cgaattctta accgccagtc aggggtgcga tatc 34

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<211> 36
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<213> Escherichia coli

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Met Arg Gly Ser His His His His His His Gly Met Ala Ser Met Thr
1 5 10 15
Gly Gly Gln Gln Met Gly Arg Asp Leu Tyr Asp Asp Asp Asp Leu Val
20 25 30
Pro Arg Gly Ser
35

<210> 9
<211> 186
<212> PRT
<213> Escherichia coli

<400> 9
Glu Gly Met Gln Phe Asp Arg Gly Tyr Leu Ser Pro Tyr Phe Ile Asn
1 5 10 15

Lys Pro Glu Thr Gly Ala Val Glu Leu Glu Ser Pro Phe Ile Leu Leu
 20 25 30
 Ala Asp Lys Lys Ile Ser Asn Ile Arg Glu Met Leu Pro Val Leu Glu
 35 40 45
 Ala Val Ala Lys Ala Gly Lys Pro Leu Leu Ile Ile Ala Glu Asp Val
 50 55 60
 Glu Gly Glu Ala Leu Ala Thr Leu Val Val Asn Thr Met Arg Gly Ile
 65 70 75 80
 Val Lys Val Ala Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys
 85 90 95
 Ala Met Leu Gln Asp Ile Ala Thr Leu Thr Gly Gly Thr Val Ile Ser
 100 105 110
 Glu Glu Ile Gly Met Glu Leu Glu Lys Ala Thr Leu Glu Asp Leu Gly
 115 120 125
 Gln Ala Lys Arg Val Val Ile Asn Lys Asp Thr Thr Thr Ile Ile Asp
 130 135 140
 Gly Val Gly Glu Glu Ala Ala Ile Gln Gly Arg Val Ala Gln Ile Arg
 145 150 155 160
 Gln Gln Ile Glu Glu Ala Thr Ser Asp Tyr Asp Arg Glu Lys Leu Gln
 165 170 175
 Glu Arg Val Ala Lys Leu Ala Gly Gly Val
 180 185

<210> 10
 <211> 548
 <212> PRT
 <213> Escherichia coli

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 Met Ala Ala Lys Asp Val Lys Phe Gly Asn Asp Ala Arg Val Lys Met
 1 5 10 15
 Leu Arg Gly Val Asn Val Leu Ala Asp Ala Val Lys Val Thr Leu Gly
 20 25 30
 Pro Lys Gly Arg Asn Val Val Leu Asp Lys Ser Phe Gly Ala Pro Thr
 35 40 45
 Ile Thr Lys Asp Gly Val Ser Val Ala Arg Glu Ile Glu Leu Glu Asp
 50 55 60
 Lys Phe Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys
 65 70 75 80
 Ala Asn Asp Ala Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala
 85 90 95

Gln Ala Ile Ile Thr Glu Gly Leu Lys Ala Val Ala Ala Gly Met Asn
100 105 110

Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Thr Ala Ala Val
115 120 125

Glu Glu Leu Lys Ala Leu Ser Val Pro Cys Ser Asp Ser Lys Ala Ile
130 135 140

Ala Gln Val Gly Thr Ile Ser Ala Asn Ser Asp Glu Thr Val Gly Lys
145 150 155 160

Leu Ile Ala Glu Ala Met Asp Lys Val Gly Lys Glu Gly Val Ile Thr
165 170 175

Val Glu Asp Gly Thr Gly Leu Gln Asp Glu Leu Asp Val Val Glu Gly
180 185 190

Met Gln Phe Asp Arg Gly Tyr Leu Ser Pro Tyr Phe Ile Asn Lys Pro
195 200 205

Glu Thr Gly Ala Val Glu Leu Glu Ser Pro Phe Ile Leu Leu Ala Asp
210 215 220

Lys Lys Ile Ser Asn Ile Arg Glu Met Leu Pro Val Leu Glu Ala Val
225 230 235 240

Ala Lys Ala Gly Lys Pro Leu Leu Ile Ile Ala Glu Asp Val Glu Gly
245 250 255

Glu Ala Leu Ala Thr Leu Val Val Asn Thr Met Arg Gly Ile Val Lys
260 265 270

Val Ala Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met
275 280 285

Leu Gln Asp Ile Ala Thr Leu Thr Gly Gly Thr Val Ile Ser Glu Glu
290 295 300

Ile Gly Met Glu Leu Glu Lys Ala Thr Leu Glu Asp Leu Gly Gln Ala
305 310 315 320

Lys Arg Val Val Ile Asn Lys Asp Thr Thr Thr Ile Ile Asp Gly Val
325 330 335

Gly Glu Glu Ala Ala Ile Gln Gly Arg Val Ala Gln Ile Arg Gln Gln
340 345 350

Ile Glu Glu Ala Thr Ser Asp Tyr Asp Arg Glu Lys Leu Gln Glu Arg
355 360 365

Val Ala Lys Leu Ala Gly Gly Val Ala Val Ile Lys Val Gly Ala Ala
370 375 380

Thr Glu Val Glu Met Lys Glu Lys Lys Ala Arg Val Glu Asp Ala Leu
385 390 395 400

His Ala Thr Arg Ala Ala Val Glu Glu Gly Val Val Ala Gly Gly Gly
405 410 415

Val Ala Leu Ile Arg Val Ala Ser Lys Leu Ala Asp Leu Arg Gly Gln
420 425 430

Asn Glu Asp Gln Asn Val Gly Ile Lys Val Ala Leu Arg Ala Met Glu
435 440 445

Ala Pro Leu Arg Gln Ile Val Leu Asn Cys Gly Glu Glu Pro Ser Val
450 455 460

Val Ala Asn Thr Val Lys Gly Gly Asp Gly Asn Tyr Gly Tyr Asn Ala
465 470 475 480

Ala Thr Glu Glu Tyr Gly Asn Met Ile Asp Met Gly Ile Leu Asp Pro
485 490 495

Thr Lys Val Thr Arg Ser Ala Leu Gln Tyr Ala Ala Ser Val Ala Gly
500 505 510

Leu Met Ile Thr Thr Glu Cys Met Val Thr Asp Leu Pro Lys Asn Asp
515 520 525

Ala Ala Asp Leu Gly Ala Ala Gly Gly Met Gly Gly Met Gly Gly Met
530 535 540

Gly Gly Met Met
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<212> PRT

<213> Escherichia coli

<400> 11

Val Glu Gly Met Gln Phe Asp Arg Gly Tyr Leu Ser Pro Tyr Phe Ile
1 5 10 15

Asn Lys Pro Glu Thr Gly Ala Val Glu Leu Glu Ser Pro Phe Ile Leu
20 25 30

Leu Ala Asp Lys Lys Ile Ser Asn Ile Arg Glu Met Leu Pro Val Leu
35 40 45

Glu Ala Val Ala Lys Ala Gly Lys Pro Leu Leu Ile Ile Ala Glu Asp
50 55 60

Val Glu Gly Glu Ala Leu Ala Thr Leu Val Val Asn Thr Met Arg Gly
65 70 75 80

Ile Val Lys Val Ala Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg
85 90 95

Lys Ala Met Leu Gln Asp Ile Ala Thr Leu Thr Gly Gly Thr Val Ile

	100		105		110										
Ser	Glu	Glu	Ile	Gly	Met	Glu	Leu	Glu	Lys	Ala	Thr	Leu	Glu	Asp	Leu
	115					120						125			
Gly	Gln	Ala	Lys	Arg	Val	Val	Ile	Asn	Lys	Asp	Thr	Thr	Thr	Ile	Ile
	130					135					140				
Asp	Gly	Val	Gly	Glu	Glu	Ala	Ala	Ile	Gln	Gly	Arg	Val	Ala	Gln	Ile
145					150					155				160	

<210> 12
 <211> 42
 <212> PRT
 <213> Escherichia coli

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 <222> (1)
 <223> Amino acid 1 is Ile, Met, Leu, Val, Ser, Phe or Ala

<220>
 <221> VARIANT
 <222> (5)
 <223> Amino acid 5 is Ile, Leu, Val, Pro or Ala

<220>
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 <222> (8)
 <223> Amino acid 8 is Leu, Glu, Val, His or Ile

<220>
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 <222> (9)
 <223> Amino acid 9 is Glu, Ala, Arg, Leu, Gln or Asn

<220>
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 <222> (12)
 <223> Amino acid 12 is Ala, Val, Ile, Met, Leu, Asn, Ser, Arg, Thr, Gln or Lys

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 <222> (28)
 <223> Amino acid 28 is Glu, Asp or Gly

<220>
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 <222> (31)
 <223> Amino acid 31 is Ala, Pro, Ser, Thr, Gly, or Leu

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<222> (32)
<223> Amino acid 32 is Thr, Ala, Asn, Ser, or Val

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<221> VARIANT
<222> (34)
<223> Amino acid 34 is Val, Leu, Ile, or Ala

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<221> VARIANT
<222> (35)
<223> Amino acid 35 is Val, Leu, Ile, Phe or His

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<221> VARIANT
<222> (36)
<223> Amino acid 36 is Asn, Ser, or Leu

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<222> (39)
<223> Amino acid 39 is Arg, Lys, Asn, Gln, Leu or Ser

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<222> (41)
<223> Amino acid 41 is Ile, Thr, Ser, Gly, Val, Ala,
Gln, Asn, Lys, Phe or Pro

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<223> Represents any amino acid or peptide bond

<220>
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1 5 10 15
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
35 40

<210> 13
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<212> PRT
<213> Escherichia coli

<220>
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<400> 13
Ile Xaa Xaa Xaa Leu Xaa Xaa Leu Glu Xaa Xaa Ala Xaa Xaa Xaa Xaa
1 5 10 15
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Glu Xaa Xaa Ala Thr
20 25 30
Xaa Val Val Asn Xaa Xaa Arg Xaa Ile Val
35 40

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<212> PRT
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<223> Amino acid 3 may also be Val

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<223> Amino acid 6 may also be Ser

<220>
<221> VARIANT
<222> (9)
<223> Amino acid 9 may also be Ile

<400> 14
Pro Leu Leu Ile Ile Ala Glu Asp Val Glu Gly Glu Ala Leu
1 5 10

<210> 15
<211> 10
<212> PRT
<213> Escherichia coli

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<222> (2)..(4)
<223> Xaa is at least one amino acid residue

<220>
<221> VARIANT
<222> (5)..(5)
<223> Amino acid 5 is selected from Leu, Ile, Pro, Val, or Ala

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<222> (6)..(7)
<223> Xaa is at least one amino acid residue

<220>
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<222> (8)..(8)
<223> Amino acid 8 is selected from Leu, Glu, Val, His, or Ile

<220>
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<222> (9)..(9)
<223> Amino acid 9 is selected from Glu, Ala, Arg, Leu, Gln, or Asn

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<221> VARIANT
<222> (10)..(10)
<223> Xaa is at least one amino acid residue

<400> 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10

<210> 16
<211> 32
<212> PRT
<213> Escherichia coli

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<223> Amino acid 21 is selected from Ala, Pro, Ser, Thr, Gly, or Leu

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<222> (22)..(22)
<223> Amino acid 22 is selected from T, A, N, S, or V

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<221> VARIANT

<222> (23)..(23)
<223> Xaa is any amino acid

<220>
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<222> (24)..(24)
<223> Amino acid 24 is selected from Val, Leu, Ile, or Ala

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<221> VARIANT
<222> (25)..(25)
<223> Amino acid 25 is selected from Val, Leu, Ile, Phe, or His

<220>
<221> VARIANT
<222> (26)..(26)
<223> Amino acid 26 is selected from Asn, Ser, or Leu

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<222> (27)..(28)
<223> Xaa is any amino acid

<220>
<221> VARIANT
<222> (29)..(29)
<223> Amino acid 29 is selected from Arg, Lys, Asn, Gln, Leu, or Ser

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<221> VARIANT
<222> (30)..(30)
<223> Xaa is any amino acid

<220>
<221> VARIANT
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<223> Amino acid 31 is selected from Ile, Thr, Ser, Gly, Val, Ala, Gln, Asn, Lys, Phe, or Pro

<220>
<221> VARIANT
<222> (32)..(32)
<223> Amino acid 32 is selected from Val, Ile, Leu, Phe, Asp, or Thr

<400> 16

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30

<210> 17
<211> 10
<212> PRT

<213> Escherichia coli

<220>

<221> VARIANT

<222> (2)..(4)

<223> Xaa is at least one amino acid

<220>

<221> VARIANT

<222> (6)..(7)

<223> Xaa is at least one amino acid

<220>

<221> VARIANT

<222> (10)..(10)

<223> Xaa is at least one amino acid

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Ile Xaa Xaa Xaa Leu Xaa Xaa Leu Glu Xaa
1 5 10

<210> 18

<211> 32

<212> PRT

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<223> Xaa is at least one amino acid

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<223> Xaa is at least one amino acid

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<223> Xaa is at least one amino acid

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<223> Xaa is at least one amino acid

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<223> Xaa is at least one amino acid

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<223> Xaa is at least one amino acid

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Xaa Glu Xaa Xaa Ala Thr Xaa Val Val Asn Xaa Xaa Arg Xaa Ile Val
20 25 30

E7
cont.
